

I. CONSTRUCTION ACTIVITIES

I.A. INTRODUCTION

Storm water from construction sites can be a major cause of water pollution. Storm water includes rainfall, melting snow, surface runoff and drainage, and rainfall or snowmelt from an adjacent site running onto or through a construction site. Pollution in storm water can include soil, sand, natural debris (leaves, grass, etc.), construction debris (woodchips, insulation scraps, cement), and chemicals (fuel, oil, lubricants, paint, tar, etc.).

When soil, vegetative cover, tree canopies, etc. are disturbed on a construction site, soil is loosened, making it easier for storm water to carry the soil off the site, along with any debris or chemicals on the soil. Additionally, any new or existing paved surfaces onto which dirt and debris are tracked, or on which construction debris or chemicals are stored or spilled, make it easier for storm water to collect and carry those materials off the site.

Once storm water leaves a site, it can run directly into a river or lake, or can be carried to a river or lake through an arroyo, ditch, storm sewer, or other conveyance. If the storm water is polluted, it will carry those pollutants into the receiving waters and degrade the quality of that water.

The three main goals of the NPDES permitting program for storm water discharges associated with construction activities are to reduce erosion, minimize sedimentation, and control the discharge of non-storm water pollutants.

With this document, users can develop a storm water management plan tailored to the needs of their particular project. Users will also be assisted in meeting regulatory requirements of storm water management. Although runoff control measures are required by law in most instances, these measures are applicable anywhere soil is disturbed and erosion and sedimentation are potential problems.

Users should also consult with their local government authority to determine the local processing procedures for SWPPPs. For example, SWPPPs for construction activities within COA must conform to the submission procedures outlined in the Albuquerque Development Process Manual.

I.B. REGULATORY SUMMARY

I.B.1. NPDES Regulations

As part of the Water Quality Act of 1987, storm water discharge associated with industrial activity from a point source to waters of the United States is unlawful, unless authorized by an NPDES Permit. Construction activities that disturb an area greater than

one acre by grading, clearing, grubbing, or other construction activity are subject to the requirement of an NPDES Permit.

In order to effectively manage the permit process, the EPA has produced a General Permit for construction activities, which defines specific conditions and requirements to be met as part of the General Permit. The General Permit establishes the procedures required for proper coverage, the requirement for an SWPPP, and requirements for termination of permit coverage.

In addition to NPDES Permits for construction activities, large, medium, and some small sized municipalities (as identified by the EPA) are required to obtain NPDES Permits for their MS4s to control storm water outflow into waters of the United States. This NPDES Permit will require local jurisdictions to take an active role in monitoring and controlling pollution due to storm water runoff from a variety of sources, including construction activities. Therefore, in addition to meeting the requirements for the General Permit, the site operator is obligated to contact the local jurisdiction to determine if local requirements must be met in addition to General Permit coverage.

The NPDES Storm Water Permitting Program in New Mexico is administered by the EPA. Requirements for the NPDES Storm Water Discharge Permit are defined by federal law in Section 402(p) of the CWA, and added by Section 405 of the Water Quality Act of 1987.

In November 1990, EPA published regulations for NPDES Permits for certain storm water discharges. On September 9, 1992, EPA issued an NPDES General Permit that applies to the majority of storm water discharges associated with specific industrial activities, including construction that disturbs five acres or more. In July 2003, EPA published a new General Permit for discharges from large and small construction activities, which changed the disturbed area requiring a permit from five acres to one acre, and included some small MS4s. The new General Permit replaces the previous Permit issued by EPA Region 6 dated July 6, 1998.

Construction activities and MS4s are covered by separate NPDES Permits with distinct conditions, but the federal compliance requirements for these two NPDES Permits include related activities.

As noted above, all construction activities that disturb one acre or more, or that are a part of a common development or plan of sale, are subject to the NPDES Permit requirement. Failure to abide by the terms of the General Permit or failure to develop and implement a site-specific NPDES Permit is a violation of federal law, which can subject the owner or operator to severe fines or imprisonment.

Compliance with the requirements of the General Permit consists of four major components that must be accomplished:

- Determination of eligibility
- Preparation and implementation of an SWPPP
- Submission of a Notice of Intent (NOI)
- Submission of a Notice of Termination (NOT)

Note: The SWPPP is usually prepared in conjunction with the construction design documents for the site, and before the submission of the NOI to the EPA, depending on local authority requirements.

I.B.1.a. Eligibility Determination

Permittees are only eligible for coverage under the Construction General Permit (CGP) if their storm water discharges and storm water discharge-related activities do not adversely impact federally listed endangered or threatened species or critical habitats. Applicants are required to conduct an assessment of the impacts of their storm water discharges and storm water discharge-related activities on endangered and threatened species and critical habitat. Appendix C of the CGP provides detailed instructions to assist applicants in conducting an assessment and pursuing formal consultation with federal wildlife protection agencies if necessary.

I.B.1.b. Permittees

The operator(s) and owner(s) of a construction site are the *permittees*, and are responsible for submitting an NOI and complying with the NPDES Permit. The term *operator* is defined by the EPA as “the responsible party who has day-to-day supervision and control of activities occurring at the site.” The operator may be the owner, developer, engineer, or general contractor. Other parties responsible for construction activities on the site are identified as *co-permittees*. The construction contract is an appropriate place for the permittee and any co-permittee to be identified, and their respective responsibilities listed.

Any user of this manual should be apprised that EPA regulations are periodically amended. The user is referred to EPA's storm water website for Region 6 to investigate possible storm water amendments or updates to the regulations copied herein.

I.B.2. NPDES General Permit

The NPDES General Permits are termed *umbrella permits*, and will consolidate permit compliance requirements for many common sources of pollutants, activities, and sites under one permit. The coverage of these *umbrella permits* is broad, with general compliance requirements, and is effective for five years. Future permitting strategies will be more specific to individual facilities, specific types of activities, and watershed areas. The permitting strategy developed by EPA outlines the method of compliance and the role of the permittee.

The current CGP replaces two permits issued in 1998 (Federal Register Volume 63, February 17, 1998, p. 7858, etc. for EPA Regions 1, 2, 3, 7, 8, 9, and 10, and Federal Register Volume 63, July 6, 1998, p. 36489, etc. for EPA Region 6). Any references to the 1998 CGP in the 2003 CGP refer to those two permits.

A primary area of concern centers on the requirement to permit MS4s at lower population levels. In urban areas all MS4s are regulated. The other primary concern related to the construction-activity General Permit is that sites as small as one-acre disturbed areas are required or eligible to obtain coverage under the General Permit. The salient feature is that many more entities (MS4s) and developments (greater than

one-acre areas) are now required to go through the permit process. See Appendix E for the complete rule as published.

Regulated municipalities are responsible for development of a management program for construction activities in their jurisdiction under their NPDES Permit application. A large or medium MS4's application must include the six program elements that address appropriate planning and construction procedures; ensures the implementation, inspection, and monitoring of construction sites that discharge storm water into their MS4s; and provides for education or training for construction site operators. Small MS4s must apply under the General Permit numbered NMR040000 or NMR040001. The format and program requirements are outlined under these permits.

The permittee must adhere to general compliance requirements established in the NPDES General Permit. The program is intended to be self-regulating and requires the permittee to prepare and implement the project SWPPP. During the construction phase, the permittee is responsible for:

- Maintaining a copy of the SWPPP onsite
- Inspecting the site to ensure that SWPPP improvements are in place and functional
- Revising the SWPPP as site conditions and construction activities change
- Maintaining temporary erosion and sediment controls and housekeeping measures
- Keeping records

Each construction project will vary in scope and responsible parties. For the purpose of pollution controls for storm water discharges, the construction project site and construction activities to be covered by the SWPPP include:

- Areas cleared or disturbed for installation of improvements
- Areas cleared for construction activities, such as temporary construction yards, material storage, and preparation areas
- Onsite and offsite areas excavated for fill or borrow material
- Disposal areas, when not within a controlled landfill
- Transportation of loose fill, materials, or debris to and from the site

In addition to the general filing requirements of the General Permit, there are other requirements that may impact construction activities. These items follow, along with methods to address the requirements, where applicable.

I.B.2.a. Stabilization Requirements for Inactive Areas

During construction, some areas may be inactive for long periods of time. The General Permit requires areas inactive for more than 14 days to be temporarily stabilized, unless it is anticipated that construction will resume within 21 days. In that circumstance, temporary stabilization is not required. Thus, appropriate sequencing and phasing within a project can minimize or eliminate the need for temporary stabilization. There is an

exemption from this requirement when the 14-day period occurs during the dry season for arid and semi-arid regions.

The General Permit states that, for common drainage areas that serve an area of ten or more acres that are disturbed at one time, a sediment basin shall be provided where attainable until final stabilization of the site occurs. As stated in the BMP, the required volume for the sediment basin must provide storage for the calculated volume of runoff from a two-year, 24-hour storm for each acre of drainage area that is disturbed. Sediment basins shall be designed and constructed to the minimum standards provided in Appendix A, Best Management Practices.

By phasing development and the amount of land disturbed at one time, the size of the basin can be reduced or eliminated. However, if necessary, sediment basins provide excellent temporary and permanent storm water treatment and can serve as an amenity to the site. Where a sediment basin with the above storage requirements is not attainable, smaller sediment basins and/or sediment traps may be used. However, at a minimum, silt fences or equivalent controls are required on all sideslopes and downslope boundaries of the site.

I.B.2.b. Storm Water Management Measures

As part of the SWPPP, storm water management measures must be addressed to reduce pollutants in storm water runoff from the site once construction is complete and the development is occupied or placed in operation. Although sometimes referred to as “post-construction” controls, BMPs to control the quality of storm water runoff from developed areas need to be considered during the earliest stages of planning for the project. Practices such as reducing the amount of impervious surface, open drainage swales, extended detention wet ponds, and others should be given consideration. Appropriate measures must be incorporated into project plans and the SWPPP.

Specific techniques listed in the Permit include storm water detention (dry sedimentation basins), retention structures (extended detention wet ponds), measures to allow for infiltration (trenches, open drainage swales), and velocity dissipation.

I.B.2.c. Coverage of Support Activities

The Permit also authorizes storm water discharges from support activities, including concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, and borrow areas, provided that:

- The support activity is directly related to a construction site having NPDES Permit coverage for discharges of storm water associated with construction activity
- The support activity is not a commercial operation serving multiple unrelated construction projects by different operators, and does not operate beyond the completion of the construction activity at the last construction project it supports
- Appropriate controls and measures are identified in an SWPPP covering the discharges from the support activity

I.B.2.d. Spill Notification

The General Permit allows for storm water discharge from construction sites only. Discharges of other substances from construction activities or from operations on a site during construction are not permitted. (See Appendix E.) In the event of a spill of a hazardous substance, the operator is required to notify the National Response Center (NRC) at (800) 424-8802, the New Mexico Environment Department (NMED) at (505) 827-9329, and the local fire department to properly report the spill. A written description of the release must be provided to the EPA Regional Office, which includes the date and circumstances of the release, mitigation measures, and steps taken to prevent another release. In addition, the SWPPP must be revised within 14 calendar days after the release to reflect the release, stating the type and quantity of material released, the date of the release, the circumstances of the release, and actions to be taken to prevent further spills.

If fuels, oils, or other substances are to be present onsite, it is imperative that closed containers be provided along with secondary containment areas for large-quantity spills. Hazardous chemicals include fertilizers, paints, oils, grease, pesticides, and fuels, along with other construction chemicals. While much of this manual focuses on the sediment- and erosion-control aspects of the SWPPP, the potential for damaging pollution from chemicals is great. Provisions must be made to address potential pollution through the use of the BMPs, as well as compliance with Occupational Safety and Health Administration (OSHA) and other regulatory requirements.

A list of agencies/individuals to be notified in the event of a spill should be specified in the SWPPP.

I.B.2.e. Retention of Records

As part of the General Permit, the SWPPP and supporting documentation must be retained for a period of three years after the completion of the project. This is to protect the owner/operator of the site from future claims concerning water quality and measures implemented at the site. It is recommended that each of the owner/operators maintains a copy of the SWPPP for the three-year period to protect against potential lawsuits.

I.B.3. NPDES Permitting Process

Figure I-1 shows a typical construction project sequence, including permitting requirements. During the design of a construction project, determine if the site will be regulated. Currently, if the area to be disturbed is one or more acres, the NPDES requirements will need to be met, and coverage obtained under the General Permit by following this guidance, or by obtaining a site-specific permit (which is not covered by this guidance).

If the site meets the size requirements, a determination must be made if there are any threatened and endangered species (T&E) or historic properties issues for the site. (See Appendix E, July 1, 2003, Notices, p. 10 and Appendix C of the General Permit.) If these issues arise, an appropriate site-specific permit application is required and this guidance is not applicable. If none of these items is an issue, proceed with the preparation of an SWPPP for the construction.

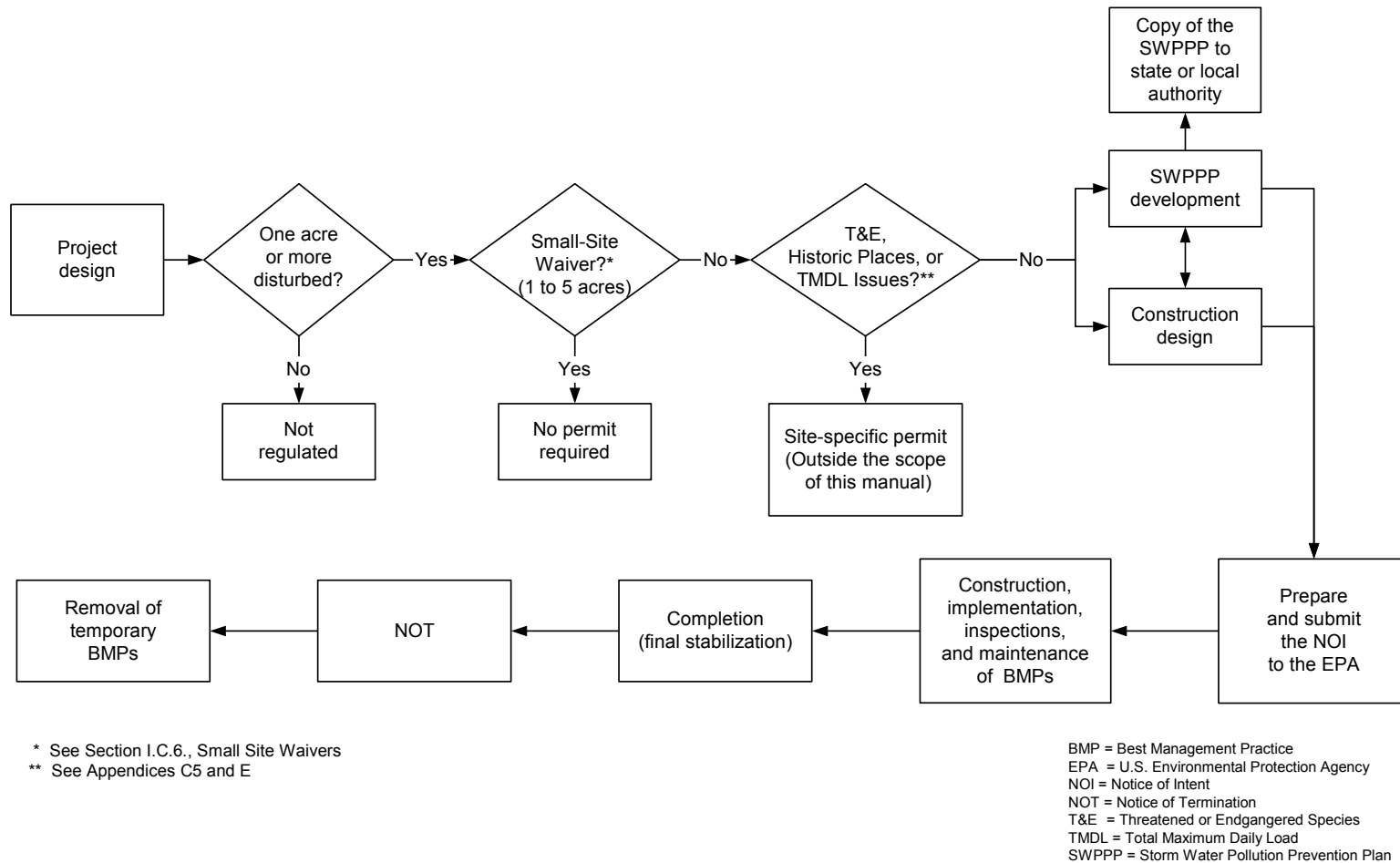


Figure I-1. NPDES Construction Project Flowchart

The SWPPP should be prepared and completed prior to the start of construction of a project. Once the SWPPP is complete, both the owner and the operator must prepare an NOI and send it to the EPA. A copy must be sent to the local MS4 operator, if any are in the area of construction activities.

If the preparer of the SWPPP intends to subjugate any of the responsibilities outlined in the SWPPP to a builder/subcontractor, these actions need to be specifically addressed in the SWPPP. Construction can begin seven calendar days after acknowledgement of receipt of the complete NOI is posted on EPA's NPDES website (www.epa.gov/npdes/stormwater/cgp).

During construction, the measures and inspections that are given in the SWPPP need to be completed as they are given in the SWPPP. If site conditions, design changes, or construction sequencing warrant a change in the type, design, or scheduling of the storm water pollution control measures, then the SWPPP needs to be revised, signed, and dated. Inspections of the site will be conducted, and any maintenance to BMPs/controls will be made, as necessary, to ensure that the SWPPP is being followed.

Upon completion of the construction, an NOT must be prepared and submitted to the EPA by the contractor/operator. The owner/operator shall prepare and submit the NOT to the EPA when 70 percent planned stabilization is established.

I.C. NOTICE OF INTENT

I.C.1. Description

The NOI is the primary document used by the EPA to monitor and enforce compliance with the NPDES permitting requirements. The NOI is to be submitted after preparation of construction plans and the SWPPP. You are authorized to discharge storm water from construction activities under the terms and conditions of the CGP seven calendar days after acknowledgement of receipt of your complete NOI is posted on EPA's NPDES website (www.epa.gov/npdes/stormwater/cgp), except as noted below.

EPA may delay your authorization based on eligibility considerations of Subpart 1.3 of the CGP (e.g., Endangered Species Act concerns). In these instances, you are not authorized for coverage under the CGP until you receive notice from EPA of your eligibility.

The operator (see Section I.B.1.b., Permittees) of the site is required to submit a complete and accurate NOI, and is ultimately responsible for the effective reduction of pollution and sediment loss from the site. An NOI or permit number must be placed at the site throughout the construction and until final stabilization.

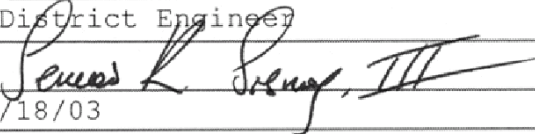
I.C.2. Preparing an NOI

Figure I-2 is a sample of a completed EPA NOI form for construction activities. A blank NOI form and instructions are included in Appendix B1 of this manual and Appendix E of the CGP, which is printed in its entirety as Appendix E of this document. Users should check the EPA website (www.epa.gov/npdes/stormwater/cgp) for updated versions of requirements and forms.

This Form Replaces Form 3510-9 (8-98) Form Approved OMB Nos. 2040-0188 and 2040-0211 Refer to the Following Pages for Instructions	
NPDES Form	<div style="text-align: center;"> </div> <div style="text-align: center; font-size: small;"> United States Environmental Protection Agency Washington, DC 20460 </div> <div style="text-align: center; font-weight: bold;"> Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit </div>
<p>Submission of this Notice of Intent (NOI) constitutes notice that the party identified in Section II of this form requests authorization to discharge pursuant to the NPDES Construction General Permit (CGP) permit number identified in Section I of this form. Submission of this NOI also constitutes notice that the party identified in Section II of this form meets the eligibility requirements of the CGP for the project identified in Section III of this form. Permit coverage is required prior to commencement of construction activity until you are eligible to terminate coverage as detailed in the CGP. To obtain authorization, you must submit a complete and accurate NOI form. Refer to the instructions at the end of this form.</p>	
I. Permit Number	
NMR150000	
II. Operator Information	
Name: NMDOT	
IRS Employer Identification Number (EIN): 85 - 6000581	
Mailing Address:	
Street: P.O. Box 10	
City: Las Vegas State: NM Zip Code: 87701 -	
Phone: 505 - 454 - 3600 Fax (optional): - - -	
E-mail (optional):	
III. Project/Site Information	
Project/Site Name: AC-TPM-TPE-039-1(9)42/CN 3102	
Project Street/Location: NM 39, MP 42.05 to MP 49	
City: Mosquero State: NM Zip Code: 87733 -	
County or similar government subdivision: Harding	
Latitude/Longitude (Use one of three possible formats, and specify method)	
Latitude 1. 10° 35' 12" N (degrees, minutes, seconds) 2. ° ' " N (degrees, minutes, decimal) 3. ° N (decimal)	Longitude 1. 35° 46' 36" W (degrees, minutes, seconds) 2. ° ' " W (degrees, minutes, decimal) 3. ° W (decimal)
Method: <input checked="" type="checkbox"/> U.S.G.S. topographic map <input type="checkbox"/> EPA web site <input type="checkbox"/> GPS <input type="checkbox"/> Other: • If you used a U.S.G.S. topographic map, what was the scale: 7 1/2°	
Project Located in Indian country? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If so, name of Reservation or if not part of a Reservation, put "Not Applicable":	
Estimated Project Start Date: 02 / 07 / 2004 Estimated Project Completion Date: 10 / 30 / 2004 <div style="display: flex; justify-content: space-around; font-size: x-small;"> Month Date Year Month Date Year </div>	
Estimated Area to be Disturbed (to the nearest quarter acre): 40.00	

EPA Form 3510-9 (Rev. 6/03)

Figure I-2. Sample of a Completed EPA Notice of Intent (NOI) Form for Construction Activities

IV. SWPPP Information											
Has the SWPPP been prepared in advance of filing this NOI? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No											
Location of SWPPP for viewing: <input type="checkbox"/> Address in Section II <input type="checkbox"/> Address in Section III <input checked="" type="checkbox"/> Other											
If Other: SWPPP Street: 153 Bacon Street											
City: Raton											
State: NM Zip Code: 87040 -											
SWPPP Contact Information (if different than that in Section II):											
Name: Severiano K. Sisneros, III											
Phone: 505 - 445 - 9553 Fax (optional): - -											
E-mail (optional):											
V. Discharge Information											
Identify the name(s) of waterbodies to which you discharge. Mosquero Creek											
Is this discharge consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s)?											
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No											
VI. Endangered Species Information											
Under which criterion of the permit have you satisfied your ESA eligibility obligations?											
<input type="checkbox"/> A <input type="checkbox"/> B <input checked="" type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F											
• If you select criterion F, provide permit tracking number of operator under which you are certifying eligibility:											
VII. Certification Information											
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.											
Print Name: Severiano K. Sisneros, III											
Print Title: District Engineer											
Signature: 											
Date: 12/18/03											

EPA Form 3510-9 (Rev. 6/03)

**Figure I-2. Sample of a Completed EPA Notice of Intent (NOI) Form
for Construction Activities (continued)**

You must use the NOI form provided in Appendix E of the CGP or Appendix B1 of this manual (or a photocopy thereof). Alternatively, you may complete an eNOI form electronically online. Blank forms and the eNOI form are available at www.epa.gov/npdes/stormwater/cgp. If EPA makes other NOI forms available (either directly, by public notice, or by making information available on the Internet), you may take advantage of any of those options to satisfy the NOI use requirement.

You must provide the following information on the NOI form:

- The applicable permit number for which you are requesting coverage (See Appendix B of the CGP).
- Operator name, address, telephone number, and Employer Identification Number as established by the U.S. Internal Revenue Service.
- Project/Site name, address, county or similar governmental subdivision, and latitude/longitude of your construction project or site.
- Whether your site is located in Indian country and if so, the name of the Reservation, if applicable.
- Whether the SWPPP has been prepared in advance of filing of this NOI and the location where the applicable SWPPP may be viewed.
- Name of the water(s) of the U.S. into which your site discharges.
- Indication whether your discharge is consistent with the assumptions and requirements of applicable EPA approved or established total maximum daily loads (TMDLs).
- Estimated dates of commencement of construction activity and final stabilization (i.e., project start and completion dates).
- Total acreage (to the nearest quarter acre) to be disturbed for which you are requesting permit coverage.
- Whether any federally-listed threatened or endangered species, or federally-designated critical habitat are in your project area to be covered by this permit, and the basis for certifying eligibility for permit coverage based on the instructions in Appendix C of the CGP.
- A certification statement, signed and dated by an authorized representative as defined in Appendix G, Section 11, of the CGP, and the name and title of that authorized representative.

I.C.3. Where to Submit

Except as noted below, you must send your complete and accurate NOI to EPA to one of the following addresses:

For Regular U.S. Mail Delivery:

EPA Storm Water Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:

EPA Storm Water Notice Processing Center
Room 7420
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

Note: Please check the EPA website (www.epa.gov/npdes/stormwater/cgp) for the most current addresses.

As an alternative, you may submit your NOI using EPA's electronic NOI system (i.e., eNOI) as detailed at www.epa.gov/npdes/stormwater/cgp.

If the operator for a permitted site changes, a new NOI must be filed with the EPA. A new SWPPP is not required if the project is continued as originally proposed. The permittee is required to file the new NOI with the MS4 owner (city, county, etc.) if the storm water discharge is to an MS4.

I.C.4. Signatory Requirements

The site operator (contractor)/owner must file the NOI. Operators are defined as those individuals having day-to-day operational control over activities that are necessary to ensure compliance with the SWPPP, or who have operational control over construction plans and specifications and the ability to modify same. Operator changes or additions require the filing of a new NOI.

If the operator is a corporation, a responsible corporate officer must sign the NOI. If the operator is a partnership or sole proprietorship, a general partner or the sole proprietor must sign the form. For any governmental entity, the signing person must be a principal executive, officer, or ranking elected official.

I.C.5. Approval Process

Unless notified to the contrary by the EPA, operators who submit a completed and accurate NOI, in accordance with the requirements of the General Permit, are authorized to discharge storm water from construction activities under the terms and conditions of the General Permit seven days after acknowledgement of receipt of the NOI is posted on EPA's NPDES website (www.epa.gov/npdes/stormwater/cgp). EPA may deny coverage under the General Permit and require

submission of an application for an individual NPDES Permit, based on a review of the NOI or other information. Such an alternate application would be submitted to the EPA Region 6 in Dallas, Texas.

I.C.6. Small Site Waivers

While the Construction Activities General Permit dated July 1, 2003 extended the site size requiring permitting down to one acre or greater, there are coverage waivers available for three scenarios predicated on certain conditions being met and notification procedures being followed. The three scenarios are:

- Rainfall Erosivity Waiver
- TMDL Waiver
- Equivalent Analysis Waiver

I.C.6.a. Rainfall Erosivity Waiver

The Rainfall Erosivity Waiver is the most viable in New Mexico. The procedure involves calculating a rainfall erosivity factor based on several factors presented here to facilitate the calculation. An electronic Erosivity Index Calculator (developed by Texas A&M) is available online at ei.tamu.edu/index.html. The methodology below comes from Chapter 2 of Agriculture Handbook Number 703, *Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation*, pp. 21-64, dated January 1997; United States Department of Agriculture, Agriculture Research Service. The related “R” Zones map is presented as Figure I-3 (the Isoerodent Map of New Mexico), and Figure I-4 is the Erosivity Index Map. Table I-1 is the Erosivity Index Table. The appropriate use of these figures is required to determine the “R” value for a 1–5 acre construction site, given the project’s location and duration. Since New Mexico contains only Erosivity Index Zones 72 thru 91, only that page is presented as part of this document.

The process is as follows:

1. Determine the base “R” value from the Isoerodent Map of New Mexico (Figure I-3) for the site location.
2. Go to the Erosivity Index (Table I-1) and enter the row that corresponds to the zone where the site is from the Erosivity Index Zone Map (Figure I-4).
3. Look across the row determined in Step 2 above and:
 - (a) Locate the project beginning date and write that value down.
 - (b) Looking across that row further, locate the value for the project end date and write that value down.
 - (c) Subtract Step (a) from Step (b), and write down that difference.
4. Multiply the result of Step (c) above by the “R” value from Step 1. If the result is greater than 5, the site is NOT eligible for the small site erosivity waiver. If the result is 5 or less, the site is eligible for the waiver.

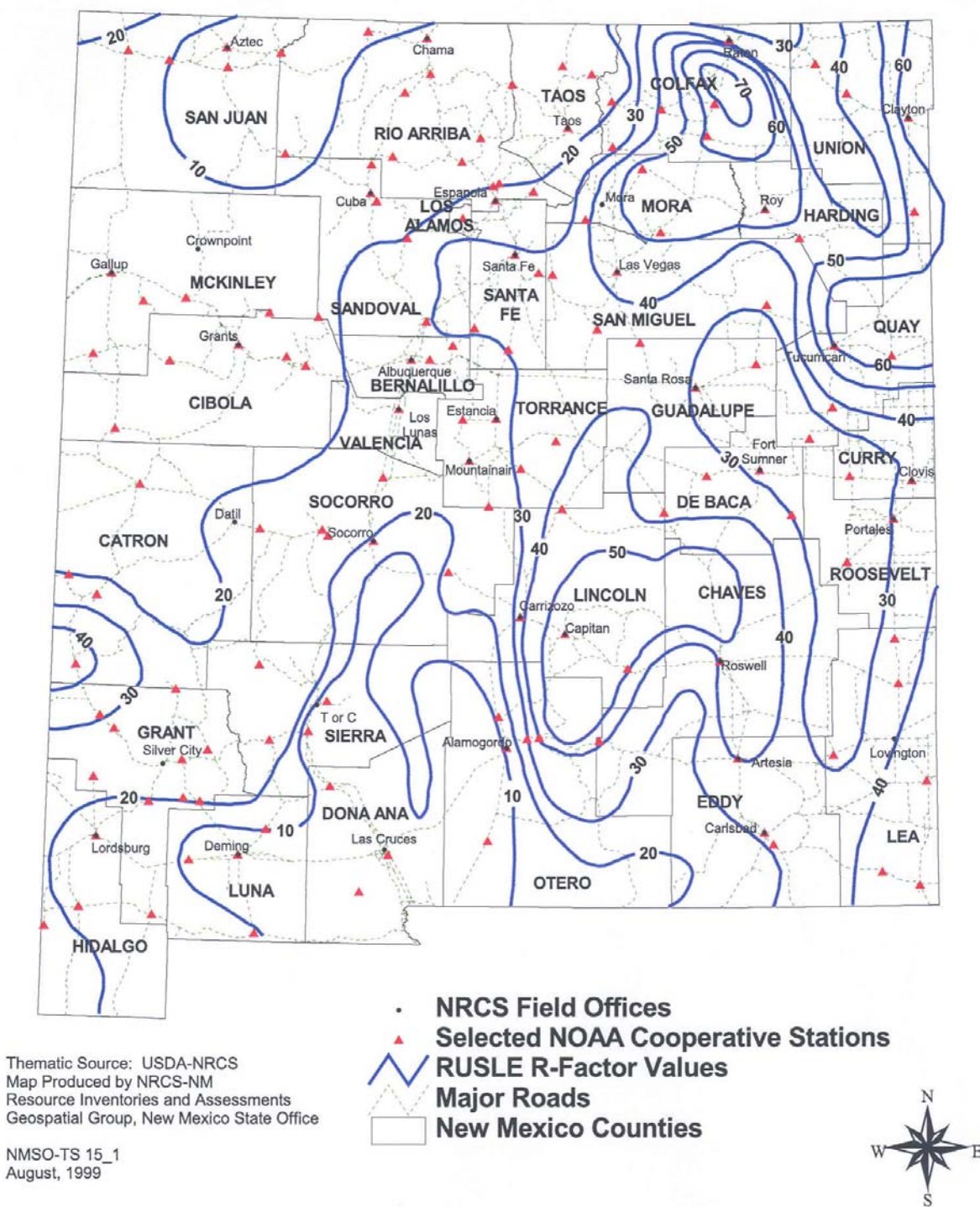


Figure I-3. Isoerodent Map of New Mexico



Table I-1. Erosivity Index for New Mexico Zones

El#	Jan 1-15	Jan 16-31	Feb 1-15	Feb 16-29	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-15	May 16-31	Jun 1-15	Jun 16-30	Jul 1-15	Jul 16-31	Aug 1-15	Aug 16-31	Sep 1-15	Sep 16-31	Oct 1-15	Oct 16-31	Nov 1-15	Nov 16-31	Dec 1-15	Dec 16-31
72	0	0	0	0	0	0	0.1	0.2	0.7	0.8	1.3	3.5	9.9	24.7	51.4	71.5	83.6	93.8	97.7	99.2	99.8	99.9	99.9	100
73	0	0	0.1	0.1	0.2	0.2	0.3	0.6	1.3	4.1	11.5	18.1	28.3	40.2	54.1	67	77.2	87.7	93.3	97.5	99.1	99.6	99.8	100
74	0	0	0	0	0	0.1	0.2	0.5	1.2	2.7	6.4	10.2	18.4	31	50.7	68.7	81.2	91.6	96.1	98.4	99.2	99.8	100	100
75	0	0.1	0.1	0.1	0.2	0.5	1.3	1.9	3	4.1	6.6	10	17.6	28.3	44.7	59.4	71.6	83.9	90.3	94.7	96.7	98.8	99.6	99.9
76	0	0	0	0	0	0.1	0.2	0.6	1.3	2	3.5	4.9	8.4	17.4	37.3	57.5	72.9	83.7	89.5	95.8	98.4	99.6	100	100
77	0	0.2	0.3	0.3	0.4	0.8	1.5	2	2.8	3.9	5.9	7.2	10.3	21.5	46.5	66.3	78.3	86.5	90.8	96	98.2	99.1	99.5	99.8
78	0	0	0	0	0	0	0.2	0.5	1.6	3.8	8.9	13.2	21.8	35.8	56.6	75.4	86	92.9	95.9	98.2	99.2	99.8	100	100
79	0	0	0	0	0	0.2	0.7	1.3	2.7	5.8	12.7	18.8	28.8	41.6	58.4	75.7	86.5	94.2	97.3	98.9	99.5	99.9	100	100
91	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100

5. A final step is to redo the above calculations for different construction periods to see if changing the construction schedule will net the contractor a waiver.

Please note that if the project is NOT completed during the prescribed period, a new calculation of the “R” value must be made. If the new value is greater than 5, a Permit, NOI, SWPPP, and Sediment Control Plan (SCP) are required.

When applying for the Small Site Erosivity Waiver, the applicant must furnish the following:

- Name, address and phone number of the site operators
- Name, address, county and latitude/longitude of the site
- Estimated construction start and completion dates, and total acreage (to the nearest quarter acre) to be disturbed
- The rainfall erosivity factor calculation that relates to the active construction phase at the site
- A statement certifying that the construction activity will take place during the period when the “R” value is 5 or less, signed and dated by an authorized representative (owner/operator)

I.C.6.b. TMDL Waiver

This waiver is available only when EPA has determined that the pollutant(s) of concern require no storm water controls at the site to protect water quality.

I.C.6.c. Equivalent Analysis Waiver

This waiver is available for non-impaired waters only and requires the owner/operator to develop an equivalent analysis showing that no allocations for the pollutants of concern are required to protect water quality. This waiver is not likely to apply in New Mexico.

On all of the above Waivers, the owner/operator is not allowed to proceed with construction activities until approval is received from EPA. The approval should be posted and retained on site. These Waivers are in lieu of having to obtain permit coverage under the CGP.

I.C.7. Violations

The permittee must comply with all conditions of the Permit. Any Permit noncompliance constitutes a violation of the CWA and is grounds for enforcement action; Permit termination, revocation, and re-issuance or modification; or denial of a Permit renewal application. Penalties for violations of Permit conditions fall into the following general categories:

- Criminal

Negligent violations

A fine of not less than \$2,500 and not more than \$25,000 per day of violation, or imprisonment of not more than one year, or both

Knowing violations

A fine of not less than \$5,000 and not more than \$50,000 per day of violation, or imprisonment of not more than three years, or both

Knowing endangerment

A fine of not more than \$250,000 or imprisonment of not more than 15 years, or both

False statement

A fine of not more than \$10,000 or imprisonment of not more than two years, or both. Upon a second conviction, a fine of not more than \$20,000 per day of violation or imprisonment of not more than four years, or both.

- Civil

A fine of not more than \$27,500 per day per violation

- Administrative

Class I penalty

A fine of not more than \$11,000 per violation, with a maximum fine of \$27,500

Class II penalty

A fine of not more than \$11,000 per day of violation, with a maximum fine of \$137,500

The specific dollar amounts for each of the above types of violations and any associated imprisonment of guilty parties are specified Appendix E.

I.D. SWPPP DEVELOPMENT

I.D.1. Description

The SWPPP is a document that defines the construction activities and BMPs/controls to be employed to control the release of pollution from the construction site. The SWPPP consists of two components: a narrative description of the project and a drawing of the site showing the limits of soil disturbance, storm water drainages, and locations and types of BMPs/controls.

The SWPPP identifies the techniques that the operator will use to reduce site erosion and sediment loss, and manage construction-related wastes. It identifies the maintenance procedures that the operator will perform to preserve the efficiency of the technique used. The SWPPP must clearly describe the control measures, the timing and sequence of implementation, and which permittee (contractor) is responsible for implementation and maintenance of the control measures.

The SWPPP is very likely to change during the course of construction due to variations in construction techniques and/or site conditions. In order to maintain the effectiveness of the original SWPPP design, these modifications should be made by personnel experienced in the design of erosion- and sediment-control systems. The EPA requires that the SWPPP documents be updated within seven days of any change in the pollution prevention systems employed on the site.

The SWPPP is not submitted to the EPA as part of the NOI; instead, it must be available onsite or nearby for inspection by EPA personnel, state and/or local jurisdiction staff, and the public upon request. An EPA Permit Information form (see Figure I-5 and Appendix B1) must be posted if it is impossible to store the SWPPP, NOI, and EPA acknowledgement letter onsite. If the Permit number has not yet been received, a copy of the NOI must be posted onsite.

The SWPPP must also contain the following:

- NOI
- EPA Acknowledgement Letter
- EPA Permit Information Form
- NPDES Personnel Qualification Form
- SCP
- Endangered Species Act No-Impact Statement

I.D.2. Developing and Implementing an SWPPP for Construction Activities

An outline of a step-wise SWPPP preparation process is given in Figure I-6. If an SWPPP is going to be prepared from scratch, it is recommended that this outline be followed to ensure completeness and to expedite the SWPPP review. A detailed explanation of this outline follows in Sections I.D.2.a. through h., derived from EPA's *Brief Guide to Requirements for Developing and Implementing Pollution Prevention Plans for Construction Activities*. The user of this manual should check EPA's storm water website for Region 6 for the most current version of the guide. As an alternative to writing the SWPPP from scratch, two fill-in-the-blank SWPPP templates are provided in Appendix B1. An SWPPP outline, a blank certification form, a checklist, a requirements list, and alternate SWPPP forms are also provided in Appendix B1.

I.D.2.a. Need for Storm Water Management

Storm water runoff is part of the natural hydrologic cycle. However, human activities, particularly urbanization, can alter natural drainage patterns and add pollutants to the rainwater and snowmelt that run off the earth's surface and enter our nation's rivers, lakes, streams, and coastal waters. In fact, recent studies have shown that storm water runoff is a major source of the pollutants that are damaging our sport and commercial fisheries, restricting swimming, and affecting the navigability of many of our nation's waters.

Many states and municipalities have been taking the initiative to manage storm water discharges more effectively. Recognizing the importance of this problem, Congress also directed the EPA to develop a federal program under the CWA to regulate certain high-priority storm water sources. The issuance of storm water discharge permits under the NPDES is a major part of EPA's efforts to restore and maintain the nation's water quality.

Under NPDES General Permits for storm water discharges from construction activities, EPA requires the development and implementation of an SWPPP designed to reduce pollution at the source, before it can cause environmental problems that cost the public and private sectors in terms of lost resources and the expense of environmental restoration activities.



EPA NPDES Storm Water Program



The following information is posted in compliance with Part IV.B.2. of the NPDES Region 6 Storm Water Construction General Permit [63 Fed. Reg. 36502]. All parties that either individually, or taken together, meet the definition of "operator," must be permitted. Each party should complete a separate form at the construction facility. Each of these parties must have separate and distinct NPDES permit numbers (e.g. a separate permit is typically needed for each Owner/Developer, General Contractor, and/or Builder). If you do not know your NPDES Permit Number, contact the NOI Processing Center at (703)931-3230. EPA's Region 6 storm water hotline phone number is (800)245-6510. If you have mailed your NOI application form and have not received a permit number, you must post a copy of the NOI application form next to this document until you receive your permit number. This form should be posted in a conspicuous place accessible by the public on or at the edge of the facility. This form was prepared as an example and it is not a required form for use with the permit. This information may be displayed in alternative form or formats within guidelines set forth in the permit. Additional information regarding the NPDES Region 6 storm water program may be found on the Internet at <http://www.epa.gov/region6/sw/>. Any person with a complaint about the operation of this facility in regards to this permit should contact EPA Region 6 at (214)665-7595.

Permit Number	NMR10 B406
Contact Name	James E. Doe
Contact Phone	(505) 123-4567
Project Description	Redo Mosquito Creek overpass - Repave approaches
SWPPP Location (Only necessary if the site is inactive or does not have an on-site location to store the plan.)	Onsite

**Figure I-5. Sample of a Completed EPA Permit Information Form
for Construction Activities**

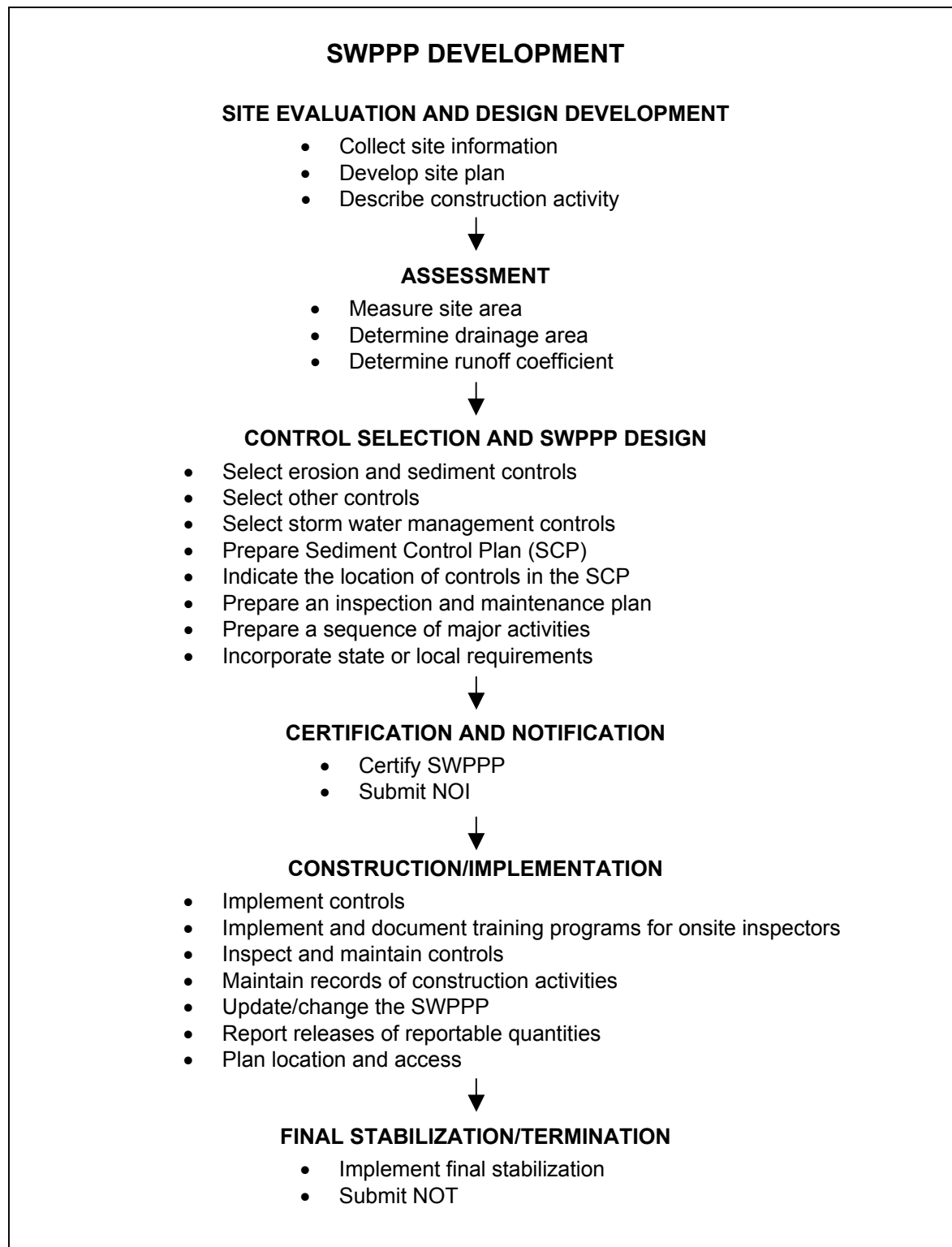


Figure I-6. Outline for Developing and Implementing an SWPPP for Construction Activities

I.D.2.b. Overview of SWPPP Requirements

The following sections are organized according to the phases of the pollution prevention planning and implementation process. A set of worksheets is provided in Appendix B1 to further clarify requirements. As shown in Figure I-6, pollution prevention planning requirements have been organized to provide users with a step-by-step process for ensuring that pollutants are not making their way into the storm water discharges from a site. The six major phases of the process are:

1. Site evaluation and design development
2. Assessment
3. Control selection and SWPPP design
4. Certification and notification
5. Construction/implementation
6. Final stabilization/termination

In addition, all Permit holders must meet a number of general requirements, and certain Permit holders will have to meet special requirements.

The following sections provide background information on pollution prevention planning requirements for General Permit applicants. A checklist and a blank SWPPP form are provided in Appendix B1.

I.D.2.c. Site Evaluation and Design Development

The first phase in preparing an SWPPP for a construction project is to define the characteristics of the site and the type of construction that will be occurring. This phase includes the following:

(A) Collect site information

In evaluating a site, the following existing information must be collected:

- Site map – The map should be a drawing, preferably to scale and preferably topographic, of the construction site. The best way to obtain a site map is to have the site surveyed by a professional surveyor. Alternatively, topographic maps may be available from state or local governments, or United States Geological Survey (USGS) topographical maps may be used. A site map will be used in subsequent steps of the development of the SWPPP. The scale of the map should be small enough so that important features, such as drainage swales and control measures that will be added later, can be easily distinguished.
- Soils information – Soils information should be based on information from the specific site. Sources of soils information could include soil borings or other geotechnical investigations. Natural Resources Conservation Service (NRCS) soil surveys may also be used, and NRCS surveys typically indicate whether a soil is erodible.

- Runoff water quality – Runoff water quality data may sometimes be available from a state or local government (e.g., the local municipal separate storm sewer authority). Runoff water quality information may also be available from the USGS, state, or local watershed protection agencies.
- Name of receiving water – Identify the name and location of the body of water (e.g., stream, creek, run, wetland, river, lake, bay, ocean) that will receive the runoff from the construction site. If the receiving water is a tributary, include the name of the ultimate receiving body of water if possible. If the site drains into an MS4, identify the system and indicate the receiving water to which the system discharges. This information is usually available from county, state, or USGS maps.

(B) Develop the site plan

The next step is to develop a site plan based primarily on the goals and objectives of the proposed facility. There are several pollution prevention principles that should be considered when developing the site plan for the project:

- Disturb the smallest vegetated area possible
- Minimize the amount of cut and fill
- Limit impacts to sensitive areas such as:
 - Steep and/or unstable slopes
 - Surface waters, including wetlands
 - Areas with erodible soils
 - Existing drainage channels

(C) Describe construction activity

In preparing the plan, describe the purpose or goal of the construction project (e.g., a single-family residential development, a multi-story office building, or a highway interchange) and list the soil-disturbing activities necessary to complete the project. Soil-disturbing activities might include clearing, excavation and stockpiling, rough grading, final or finish grading, preparation for seeding or planting, excavation of trenches, demolition, etc.

I.D.2.d. Assessment

Once the characteristics of the site and the construction have been defined, the next phase in developing an SWPPP is to measure the size of the land disturbance and estimate the impact the project will have on storm water runoff from the site, based on information collected during site evaluation and design. This phase includes the following:

(A) Measure the site area

The General Permit requires that the SWPPP indicates estimates of the total site area and the area that will be disturbed. If the information is not available from one of these sources, measurements may be made using the grid method or a planimeter. Planimeters are available from engineering and surveyor supply stores.

(B) Determine the drainage area

Determine the size of each drainage area for each point where concentrated flow will leave the site. Drainage areas are portions of the site where runoff will flow in one particular direction or to a particular discharge point. These data will help in the selection and design of the sediment control and storm water management measures for the project in the next phase of the plan. Use the drainage patterns indicated on the site map to determine the drainage areas. (Drainage areas are not required to be included in the SWPPP.)

(C) Determine the runoff coefficient

The General Permit requires estimation of the development's impact on runoff after construction is complete. This is done by estimating a runoff coefficient of the site. The runoff coefficient is an estimate of the fraction of total rainfall that will appear as runoff. For example, the "C" value of lawn area is 0.2, which indicates that only 20 percent of the water that falls on grassed areas will end up as surface runoff. In contrast, the "C" value of a paved area can be 0.9 or higher, indicating that 90 percent of the rain falling on this type of surface will run off. See Section I.D.3. for information on calculating the runoff coefficient.

I.D.2.e. Control Selection and SWPPP Design

After collecting the information and making measurements, the next phase is to design an SWPPP to control pollution of storm water runoff from the construction site. This phase includes the following:

(A) Select erosion and sediment controls

The SWPPP must include a description of the measures to be used for erosion and sediment controls throughout the construction project. These controls include stabilization measures for disturbed areas and structural controls to divert runoff and control sediment. Erosion and sediment controls are implemented during the construction period to control the loss of soil from the construction site into the receiving waters. The selection of the most appropriate erosion and sediment controls depends on a number of factors, but is most dependent on site conditions. The information collected in the site evaluation, design, and assessment phases is used to select controls. See Appendix A for control measures.

(B) Select other controls

In addition to erosion and sediment controls, the SWPPP for the project must address the other potential pollutant sources that may exist on a construction site. These include proper waste disposal; compliance with applicable state or local waste disposal, sanitary sewer, or septic system regulations; control of offsite vehicle tracking; and control of allowable non-storm water discharges, as explained in the following bullets:

- Ensure proper disposal of construction site waste materials.
- Treat or dispose of sanitary wastes that are generated onsite in accordance with state or local requirements. Contact the local government or state regulatory agency.

- Prevent offsite tracking of sediments and generation of dust. Stabilized construction entrances or vehicle washing racks should be installed at locations where vehicles leave the site. Where dust is a problem, implement dust control measures such as irrigation.
- Identify and prevent contamination of non-storm water discharges. Where non-storm water discharges allowed by the General Permit exist, they should be identified and steps should be taken to prevent contamination of these discharges.

(C) Select storm water management controls

Storm water management controls are constructed to control pollution of storm water after the construction is completed. The General Permit requires that storm water management controls be installed for construction projects where flow rates after construction exceed flow rates before construction. These controls include the following:

- Retention pond – A pond that holds runoff in a reservoir without release except by means of evaporation, infiltration, or emergency bypass.
- Detention pond – A pond that holds or detains runoff in a basin for a limited time, releasing it very slowly and allowing most of the sediments to drop out.
- Infiltration measures – Measures that allow the percolation of water through the ground surface into subsurface soil. Specific measures include infiltration trenches, basins, and dry wells.
- Vegetated swales and natural depressions – Grass-lined ditches or depressions that transport runoff, filter sediments from the runoff, and enhance infiltration of the runoff.

The EPA General Permit requires that a sediment basin be installed in any drainage location where more than ten acres in the upstream basin are disturbed at one time. The sediment basin must provide at least 3,600 cubic feet of storage for every acre of land that drains to it. For drainage locations with ten or fewer disturbed acres, sediment traps, filter fences, or equivalent measures must be installed along the downhill boundary of the construction site.

Selection of the most appropriate storm water management measures depends upon a number of factors, but most of all upon site conditions. EPA expects that most measures can be designed to remove 80 percent of the total suspended solids from post-construction runoff. When storm water management measures are selected for a development project, consider the impacts of these measures on other environmental media (i.e., land, air, and ground water). For example, if the water table is unusually high in the area, a retention pond for contaminated storm water could lead to contamination of a ground water source unless special preventive measures are taken. EPA strongly discourages the transfer of pollution from one environmental medium to another and prohibits the adoption of any storm water management practice that results in a violation of other federal, state, or local environmental laws.

In addition to pollutant removal, the storm water management portion of the plan must address velocity dissipation at discharge locations. Development usually means an increase in speed with which the site will drain because of the addition of paved areas,

storm sewers, curbs, gutters, etc. The General Permit requires that velocity dissipation devices be placed along the length of any outfall where erosive conditions exist. The potential for erosion is primarily dependent upon the velocity of the storm water discharge and the type of material that lines the channel. One velocity dissipation device is the riprap outlet protection, which is stone or riprap placed at the discharge point to reduce the speed of concentrated storm water flows.

(D) Prepare an SCP

The SCP shall include, but is not limited to, the following:

- Topography and contours
- Slopes after grading – Indicate the location and steepness of slopes after grading.
- Disturbed areas – Indicate the areas of soil-disturbing activities and the total area of the site where soil will be disturbed. Also draw an outline of areas that will not be disturbed.
- Drainage patterns/discharge points – Indicate the drainage patterns of the site after the major grading activities and the location of the points where storm water will discharge from the site.
- Flow direction
 - Note the downhill direction the runoff will follow as it flows across the site for the drainage pattern of the site.
 - Use arrows to indicate which direction runoff will flow. Show the areas where there will be overland flow and the location of swales or channels. If there is a new or proposed underground storm drain system on the site, this should be indicated in the SCP.
- Sediment load predictions (before, during, and after construction.) See Section I.D.3. for further discussion.

(E) Indicate the location of controls in the SCP

Pollution prevention measures must be shown in the SCP, including the location of each measure used for erosion and sediment control, storm water management, and other controls. When this has been done, the SCP is ready to be included in the SWPPP.

(F) Prepare an inspection and maintenance plan

After the SWPPP is prepared and the necessary controls are installed, the owner/operator is responsible for inspecting and maintaining them. The General Permit requires preparation of a description of the procedures to maintain the pollution prevention measures onsite. An inspection and maintenance report (Figure I-7 and Appendix B1), which indicates each of the control measures proposed for the construction site, should be included in the SWPPP prior to starting construction.

NMDOT SWPPP INSPECTION AND MAINTENANCE REPORT

CN: XXXX PROJECT NO: 00-000-0(0)00 ROUTE: US 285 DATE: 9/25/00
INSPECTOR: John Doe Date of Last Rainfall: 9/7/00 Amount of Last Rainfall: 0.75 in.

Approximate Stations From To	Lt/Rt	Date of Last Disturbance	Date of Next Disturbance	Control Measure	Current Condition	Corrective Action and Remarks
986+00 986+27	RT	9/7/00	N/A	7	S	
995+00 1415+00	LT	9/7/00	N/A	3	U	Finish Mulching
995+00 1415+00	RT	9/7/00	N/A	3	S	
1047+07	LT	9/7/00	N/A	10	S	
1087+50	LT	9/7/00	N/A	10	S	
1397+00	LT	9/7/00	N/A	12	U	Need check dam at the berm
1390+50	RT	9/7/00	N/A	10	S	
1394+64	RT	9/7/00	N/A	10	S	
1335+39	RT	9/7/00	N/A	10	U	Replace the silt fence with check dam
1339+66	RT	9/7/00	N/A	10	U	Replace the silt fence with check dam
Median Check Dams	M					Median Check Dams will be cleaned as required for Contract completion
1244+50	M	9/7/00	N/A	12		
1272+50	M	9/7/00	N/A	12		
1329+00	M	9/7/00	N/A	12		

<div><div>GENERAL NOTES</div><div><div>1. Inspect erosion and sediment control measures weekly or after each rainfall event.</div><div>2. List personnel/organizations participating in the inspection on the last page of the report. The Inspector listed at the top of the form shall sign the last page of the report.</div><div>3. This whole report shall be retained as a part of the PPP.</div><div>4. Note the required sediment basin and trap ponded volume next to the control measure code.</div></div></div>	<div><div><div>Stabilization Measures:</div><div><div>1. Temporary Seeding</div><div>2. Permanent Seeding</div><div>3. Mulch</div><div>4. Soil Stabilant</div><div>5. Soil Retention Blanket</div><div>6. Buffer Strip .</div></div><div><div>Structural Measures:</div><div><div>Check Dam Slopes</div><div>7. Silt Fence</div></div></div></div></div>	<div><div><div>CONTROL MEASURE CODES</div><div><div>8. Check Earth Berm</div><div>Dam Ditches</div><div>9. Silt Fence</div><div>10. Stone or Rock</div><div>11. Check Dam (Silt Fence)</div><div>12. Check Dam (Rock)</div><div>13. Earth Berm</div><div>14. Pipe Slope Drain</div><div>Ditch Liner</div><div>15. Soil Retention Blanket</div></div><div><div>16. Rock Plating</div><div>17. Sediment Trap</div><div>18. Sediment Basin</div><div>19. Pipe Outlet Protection</div><div>20. Drop Inlet Protection</div></div></div></div>	<div><div><div>CONDITION CODES</div><div><div>U Upgrade Needed</div><div>R Replacement Needed</div><div>M Maintenance Needed</div><div>C Cleaning Needed</div><div>I Increase Measures</div><div>S Stable (No action)</div><div>01</div><div>02</div><div>03</div></div></div></div>
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Falsifying Information on this Inspection and Maintenance Report may result in fine of up to \$27,500 by Federal Law.

Figure I-7. Sample of a Completed NMDOT SWPPP Inspection and Maintenance Report

(G) Prepare a sequence of major activities

A sequence of major activities should be prepared that includes the installation of all the controls, earth-disturbing activities, stabilization activities, and maintenance required for the controls. The sequence should clearly indicate the order in which each of the activities described takes place. Several general principles are helpful in developing the sequence of major activities:

- Install downslope and sideslope perimeter controls before the land-disturbing activity occurs.
- Do not disturb an area until it is necessary for construction to proceed.
- Cover or stabilize disturbed areas as soon as possible.
- Time activities to limit impact from seasonal climate changes or weather events.
- Delay construction of infiltration measures until the end of the construction project when upstream drainage areas have been stabilized.
- Do not remove temporary perimeter controls until after all upstream areas are finally stabilized.

(H) Incorporate state or local requirements

The plan must be in compliance with applicable state or local storm water management, erosion and sediment control requirements. This is done by incorporating the state or local requirements (by reference) into the plan, thereby allowing states and localities the flexibility to maintain their existing programs and provide additional authority for enforcement.

The state or local sediment control or storm water management program requirements may be identical to requirements in the General Permit. In New Mexico, the requirement for an SCP has been added to the other General Permit requirements. The SWPPP components of an NPDES Storm Water Permit ensure that a minimum level of pollution prevention is required.

I.D.2.f. Certification and Notification

Once the site description and controls portion of the SWPPP have been prepared, the following must be completed:

(A) Certify the SWPPP

Construction activities often have a number of different short-term contractors and subcontractors coming onsite during each phase of the project development. The EPA General Permit requires that the contractors and subcontractors responsible for implementing measures in the SWPPP be listed in the plan, and that they sign a certification statement that they understand the Permit requirements. This requirement holds each contractor/subcontractor responsible for certain Permit conditions.

The SWPPP should identify the authorized representative. The authorized representative should be someone at or near the top of the management chain, such as the president, vice president, or a general partner, who has been delegated the authority to sign and certify this type of document. In signing the plan, the authorized representative certifies that the information is true, and assumes liability for the plan. Please note that Section 309 of the CWA provides for significant penalties (see Appendix E) where information is false or where the permittee violates Permit requirements, either knowingly or negligently.

(B) Submit the NOI

The General Permit for storm water discharges associated with construction activities requires that an NOI be submitted before construction activities begin. The NOI is essentially an application and contains important information about the site, including site location, owner information, operator (general contractor) information, receiving water(s), existing NPDES Permit Number (if any), existing quantitative data, and a brief description of the project.

EPA has developed a two-page NOI form to be used for construction activities. (See Figure I-2 and Appendix B1.) This form indicates all the information required to be provided and must be used in order for the NOI to be processed correctly. NOIs for the EPA General Permit will be submitted directly to EPA's central processing center at one of the following addresses.

For Regular U.S. Mail Delivery:

EPA Storm Water Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:

EPA Storm Water Notice Processing Center
Room 7420
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

Note: Please check the EPA website (www.epa.gov/npdes/stormwater/cgp) for the most current addresses.

The party or parties who have day-to-day responsibilities for site operations, and the party or parties who have control over the designs and specifications necessary to ensure compliance with SWPPP requirements and Permit conditions, must submit an NOI. It is anticipated that there will be projects where more than one entity (e.g., the owner or general contractor) will each need to submit an NOI.

I.D.2.g. Construction/Implementation

Once an SWPPP has been prepared and an NOI has been filed and acknowledged, project construction may begin. However, not all requirements of the permit have been met. The construction/implementation phase includes the following:

(A) Implement controls

The first action that should be taken is to construct or perform the controls that were selected for the SWPPP. The controls should be constructed or applied in accordance with state or local specifications. If there are no state or local specifications for control measures, then the controls should be constructed in accordance with good engineering practices. The controls should be constructed and the stabilization measures should be applied in the order indicated in the sequence of major activities.

To ensure that controls are adequately implemented, it is important that the work crews who install the measures are experienced and/or adequately trained. Improperly installed controls can have little or no effect and may actually increase the pollution of storm water. It is also important that all other workers on the construction site be made aware of the controls so that they do not inadvertently disturb or remove them.

(B) Implement and document training programs for onsite inspectors

It is the responsibility of the operator to provide trained inspectors and training of new inspectors.

(C) Inspect and maintain controls

As discussed previously, inspection and maintenance of the protective measures that are part of this plan are as important to pollution prevention as proper planning, design/selection, and installation.

- **Inspection** – The EPA General Permit for New Mexico requires inspection every 14 days or within 24 hours of a storm of 0.5 inch or greater. All disturbed areas of the site, areas for material storage, and all of the erosion and sediment controls that were identified as part of the plan, should be inspected. Controls must be in good operating condition until the areas they protect have been completely stabilized and the construction activity is complete.
- **Maintenance/repairs** – The inspector should note any damages or deficiencies in the control measures on the inspection report forms provided for this purpose (Figures I-7 and I-8 and Appendix B1). These reports document the inspection of the pollution prevention measures. These same forms can be used to request maintenance and repair and to prove that inspection and maintenance were performed. The operator should correct damage or deficiencies as soon as practicable after the inspection, and any changes that may be required to correct deficiencies in the SWPPP should be made as soon as practicable after the inspection.



EPA NPDES Construction Inspection Form



The following inspection is being performed in compliance with Part IV.D.4. of the NPDES Region 6 Storm Water Construction General Permit [63 Fed. Reg. 36502] and being retained in accordance with Part V of the Permit. Qualified personnel (provided by the permittee or cooperatively by multiple permittees) shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, placement and effectiveness of structural control measures, and locations where vehicles enter or exit the site. Inspections shall be performed at least once every 14 days and within 24 hours of the end of a storm event of 0.5 inches or greater. Where sites have been temporarily stabilized, runoff is unlikely due to winter conditions, or during seasonal arid periods in arid areas (0-10 inches of rainfall annually) and semi-arid areas (10-20 inches annually) such inspections shall be conducted at least once every month. This form is primarily intended for use with construction projects in Texas and New Mexico. Permittees on Indian Country lands in Oklahoma, Louisiana and Arkansas and some oil and gas facilities in Oklahoma may use this form if they are eligible for this permit. Other facilities need to check with their NPDES authority before using this form.

If you do not know your NPDES Permit Number, contact the NOI Processing Center at (301)495-4145. This form was prepared as an example and it is not a required form for use with the permit. Alternative forms may be used if they contain all of the required information as set forth in the permit. This form and additional information regarding the NPDES Region 6 storm water program may be found on the Internet at <http://www.epa.gov/region6/sw/>. Any person with a complaint about the operation of this facility in regards to this permit should contact EPA Region 6 at (214)665-7112.

Permit Number(s) covered by this inspection (e.g. owners, developers, general contractor, builders)	NMR10 B406
Signature and Certification in accordance with Part VI.G of the permit:	<p>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</p> <p>Signature <u>James E. Doe</u> Date <u>01/01/02</u></p>
Date of Inspection	01/01/02
Inspector Name	William Smith
Is there a copy of the permit language with the SWPPP?	<input checked="" type="checkbox"/> YES • NO
Is the inspector qualified and are the qualifications documented in the SWPPP?	<input checked="" type="checkbox"/> YES • NO
Is an NPDES storm water construction sign posted at the entrance for all permittees?	<input checked="" type="checkbox"/> YES • NO
<p>You may want to use EPA Region 6 construction checklist to assure components of the SWPPP are complete. This form, the construction sign, and the checklist are available on the Region 6 NPDES Storm Water Forms and Documents web page which may be found on the internet at http://www.epa.gov/earth/r6/6en/w/forms/w.htm In addition to the checklist, you should provide a narrative (see next page) on the existing Best Management Practices and Structural Controls found during each inspection. Any problems identified in an inspection should be corrected within 7 days. The inspection should cover all components of the SWPPP and all potential pollutants. While eroded soil is the primary pollutant of concern, do not forget to inspect for other pollutant sources such as fuel tanks, paints, solvents, stabilization materials, concrete hardener, batch plants, and construction debris. The inspector will need to update the SWPPP to reflect findings of the inspection. The site map should be updated after an inspection to show controls that have been added or removed, to ensure the site map is kept current in accordance with Part IV.C. of the permit.</p>	

Figure I-8. Sample of a Completed EPA NPDES Construction Inspection Form

(D) Maintain records of construction activities

In addition to the inspection and maintenance reports, the operator should keep records of the construction activity on the site. In particular, the operator should keep a record of the following information:

- Dates when major grading activities occur in a particular area
- Dates when construction activities cease in an area, temporarily or permanently
- Dates when an area is stabilized, temporarily or permanently

These records can be used to make sure that areas where there is no construction activity will be stabilized within the required timeframe.

(E) Update/change the SWPPP

For a construction activity to be in full compliance with its NPDES Storm Water Permit, and for the SWPPP to be effective, the SWPPP must accurately reflect site features and operations. When it does not, the SWPPP must be changed. The SWPPP must also be changed if the operator observes that it is not effective in minimizing pollutant discharge from the site.

If, at any time during the effective period of the Permit, the permitting authority finds that the SWPPP does not meet one or more of the minimum standards established by the General Permit, the permitting authority will notify the permittee of required changes necessary to bring the SWPPP up to standard.

(F) Report releases of reportable quantities

Because construction activities may handle certain hazardous substances over the course of the project, spills of these substances in amounts that equal or exceed reportable quantity (RQ) levels are a possibility. EPA has issued regulations that define the RQ levels for oil and hazardous substances. These regulations are found at 40 *Code of Federal Regulations* (CFR) Part 110, 40 CFR Part 117, or 40 CFR Part 302. If there is an RQ release during the construction period, the following steps must be taken:

- Immediately notify the NRC at (800) 424-8802; NMED at (505) 827-9329; and the local fire department.
- Submit a written description of the release to the EPA regional office providing the date and circumstances of the release and the steps to be taken to prevent another release.
- Modify the SWPPP to include the information listed above.

(G) Plan location and access

The General Permit has specific requirements regarding the SWPPP location and access.

- SWPPP location – A copy of the SWPPP, a copy of the Permit, the NOI, and acknowledgement letter must be kept at the construction site from the time construction begins until the site is finally stabilized.
- Retention of records – Copies of the SWPPP and all other reports required by the Permit, as well as all of the data used to complete the NOI, must be retained for three years after the completion of final site stabilization.
- Access – Although plans and associated records are not necessarily required to be submitted to EPA, these documents are considered to be “reports” according to Section 308(b) of the CWA. Upon request, the owner or operator must make these plans available to EPA, to any state or local agency that is approving erosion and SCPs or storm water management plans, to the U.S. Fish and Wildlife Service, or to the National Marine Fisheries Service. The documents should be available from the date of commencement of construction activities to the date of final stabilization.

The SWPPP copy that is required to be kept onsite or locally available must be accessible to EPA staff for inspections. If site storm water runoff is discharged to an MS4, the plans must be made available upon request to the municipal operator of the system.

- Additional submittals – Discharge Monitoring Reports (DMRs), Permit applications, and all other reports required by the Permit are also required to be submitted to:

Program Manager
Point Source Regulation Section
Surface Water Quality Bureau
New Mexico Environment Department
PO Box 26110
Santa Fe, New Mexico 87502

I.D.2.h. Final Stabilization/Termination

The permit for discharge of storm water associated with a construction activity will remain in effect until the construction is completed. Typically, the storm water discharge associated with a construction activity is eliminated when the site is finally stabilized. When storm water discharge associated with a construction activity ceases, the owner/operator of the facility can be relieved of responsibilities under the Permit by submitting an NOT.

(A) Implement final stabilization

The NOT cannot be submitted until all construction activities for the project have been completed and all areas are finally stabilized. The General Permit defines final stabilization as uniform perennial vegetative cover with a density of 70 percent or

equivalent measures, such as riprap, for the areas of the site not covered by permanent structures or pavement.

(B) Submit the NOT

The NOT must include the name and address of both the owner and operator, as well as a certification signed by both parties. It will note that construction activities are complete, the site has been finally stabilized, and the site no longer has a discharge associated with a construction activity covered under the Permit. When the Permit is terminated, it will relieve the permittees of their responsibility. EPA has developed a one-page NOT form (Figure I-9 and Appendix B1) to be submitted to the same addresses as the NOI. Users should check the EPA website (www.epa.gov/npdes/stormwater/cgp) for updated requirements and forms.

(C) Transfer Storm Water Management Authority by the NMDOT

Once a construction project is completed by the contractor, who is the owner/operator during the construction phase, a Transfer of Storm Water Management Authority form (Figure I-10 and Appendix B1) is used to formally transfer ownership of the project to the NMDOT District Engineer. Along with this form, all documents related to the project, including the SWPPP and the final inspection report, are forwarded to the NMDOT District Engineer.

(D) NPDES personnel qualification


Proof of qualification is required in the state of New Mexico for personnel constructing and implementing storm water pollution prevention measures. To demonstrate their expertise and experience, responsible parties must complete an NPDES New Mexico Qualification form, which is submitted with the SWPPP. A blank form is available in Appendix B1.

I.D.3. Runoff Volume and Flow Rate

I.D.3.a. General Consideration

The performance of structural erosion control measures is governed by the total volume of runoff or the rate of runoff from the area tributary to the measure. The tributary area to an erosion and sediment control measure should include both disturbed and undisturbed areas subject to the adjustments addressed in the following sections.

The procedure for computing the amount of erosion is not an exact science. The processes that govern soil erosion are complicated. The complicated nature of the processes yields methodologies with many simplified assumptions in order to create a manageable solution to the problem. It is unlikely that any equation, statistical or otherwise, could accurately predict the response of all soil types to all the natural or man-made forces affecting the erosion process. Therefore, the NRCS method may be utilized as a tool, despite its limitation, to estimate the volume of runoff in determining what type of erosion control measures are applicable.

This Form Replaces Form 3517-7 (8-98) Refer to the Following Page for Instructions		Form Approved OMB Nos. 2040-0086 and 2040-0211	
NPDES Form		United States Environmental Protection Agency Washington, DC 20460 Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Storm Water Discharges Associated with Construction Activity	
Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with construction activity under the NPDES program from the site identified in Section III of this form. All necessary information must be included on this form. Refer to the instructions at the end of this form.			
I. Permit Information			
NPDES Storm Water General Permit Tracking Number: <u>NMR10B406</u>			
Reason for Termination (Check only one): <input checked="" type="checkbox"/> Final stabilization has been achieved on all portions of the site for which you are responsible. <input type="checkbox"/> Another operator has assumed control, according to Appendix G, Section 11.C of the CGP, over all areas of the site that have not been finally stabilized. <input type="checkbox"/> Coverage under an alternative NPDES permit has been obtained. <input type="checkbox"/> For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.			
II. Operator Information			
Name: <u>NMDOT</u>			
IRS Employer Identification Number (EIN): <u>85</u> - <u>6000581</u>			
Mailing Address: Street: <u>P.O. Box 10</u> City: <u>Las Vegas</u> State: <u>NM</u> Zip Code: <u>87701</u> Phone: <u>505</u> - <u>454</u> - <u>3656</u> Fax (optional): _____ E-mail (optional): _____			
III. Project/Site Information			
Project/Site Name: <u>Cn 2742/NH-RUA-064-9 (27) 43</u> Project Street/Location: <u>P.O. Box 38 SR 370 Lake Highway</u> City: <u>Clayton</u> State: <u>NM</u> Zip Code: <u>88415</u> County or similar government subdivision: <u>Union</u>			
IV. Certification Information			
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.			
Print Name: <u>Pete Mileta, Jr.</u> Print Title: <u>District Engineer</u> Signature: <u>Pete Mileta Jr</u> Date: <u>01/23/04</u>			

EPA Form 3510-13 (Rev. 6/03)

Figure I-9. Sample of a Completed EPA Notice of Termination (NOT) Form for Construction Activities

1/30/04
(DATE)

**TRANSFER OF STORM WATER MANAGEMENT AUTHORITY
NEW MEXICO DEPARTMENT OF TRANSPORTATION**

AC-TPM-TPE-039-1(9)42/CN 3102
(PROJECT NUMBER)

On 1/20/04, NMDOT Project Number AC-TPM-TPE-039-1(9)42/CN 3102
(DATE) was completed per NMDOT specifications by XYZ Construction.
(CONTRACTOR)

For the purposes of compliance with the Storm Water General Permit for Construction, control of the project for Storm Water Management purposes is hereby transferred to the District 6 Engineer representing the New Mexico Department of Transportation.

Attached to this transfer document is the original of the complete Storm Water Pollution Prevention Plan for the project that includes a "Final Inspection Report" conducted on 1/23/04 by the
(DATE) Storm Water Competent Persons representing XYZ Construction.
(CONTRACTOR)

and NMDOT. The joint inspection was conducted on 1/24/04.
(DATE)

John Doe
(NAME)
President
(TITLE)
XYZ Construction
(COMPANY)

On the above date, I, Robert Smith, Engineer for District 6
(NAME) of the New Mexico Department of Transportation, do hereby accept management control of Project Number AC-TPM-TPE-039-1(9)42/CN 3102 for purposes of Storm Water Management under the provisions of the Storm Water General Permit for Construction. I further certify that NMDOT has a Notice of Intent (NOI) established for this project as required by the Construction General Permit.

It is further acknowledged that the completed Storm Water Pollution Prevention Plan document and all attachments thereto have been received as part of this transfer of authority.

Robert Smith
(NAME)
Engineer
(TITLE)
New Mexico Department of Transportation
District 6

Figure I-10. Sample of a Completed Transfer of Storm Water Management Authority Form

I.D.3.b. Runoff Volume

The direct runoff volume to a Temporary Erosion and Sediment Control Measure is the sum of the total undisturbed tributary area multiplied by the direct runoff (for the undisturbed area) and the total disturbed area multiplied by the direct runoff (for the disturbed area).

The direct runoff from both disturbed and undisturbed areas shall be based on the two-year, 24-hour precipitation event. The precipitation amount should be obtained from the National Oceanic and Atmospheric Administration (NOAA) *Precipitation-Frequency Atlas of the Western United States*.

Hydrologic abstractions shall be estimated by the NRCS Curve Number (CN) Technique. The average NRCS hydrologic soil classification for soils within the project area should be used. CNs for undisturbed areas should be chosen considering the vegetation cover. Recommended CNs for disturbed areas based on the hydrologic soil classification are as follows:

A — 77 B — 86 C — 91 D — 94

The direct runoff from disturbed areas within the project limits is determined from Table I-2. The volume of runoff is used for the design of sediment basins and sediment traps.

$$V = (D.A. \times q)/12$$

Where: V = Volume of runoff (ft³)
D.A. = Drainage area (ft²)
q = Direct runoff (inches)
P = Rainfall (inches)

I.D.3.c. Runoff Flow Rate

The runoff flow rate is calculated using the Rational Method. The can be done by estimating a runoff coefficient for post-construction conditions. The runoff coefficient or “C” value for a variety of land uses may be found in Tables I-3 and I-4. For disturbed areas when CN is provided, runoff coefficient can be estimated by dividing direct runoff (q) by rainfall (P).

The flow rate of runoff is needed for the design of check dams, earth dikes, silt fences, pipe slope drains, and drop inlet protection.

The following guidelines are provided for runoff flow rate determination:

1. Determine the area of the drainage basin in acres.
2. Determine the two-year, one-hour rainfall using the two-year, 24-hour rainfall from the NOAA *Precipitation-Frequency Atlas of the Western United States*.

Table I-2. Direct Runoff in Inches

Curve No. 77, "A" Soil		Curve No. 86, "B" Soil		Curve No. 91, "C" Soil		Curve No. 94, "D" Soil	
24-Hour Rainfall (P)	Direct Runoff (q)	24-Hour Rainfall (P)	Direct Runoff (q)	24-Hour Rainfall (P)	Direct Runoff (q)	24-Hour Rainfall (P)	Direct Runoff (q)
1.0	0.048	1.0	0.198	1.0	0.359	1.0	0.504
1.1	0.072	1.1	0.250	1.1	0.430	1.1	0.587
1.2	0.101	1.2	0.306	1.2	0.504	1.2	0.672
1.3	0.134	1.3	0.365	1.3	0.581	1.3	0.759
1.4	0.170	1.4	0.427	1.4	0.660	1.4	0.847
1.5	0.209	1.5	0.492	1.5	0.740	1.5	0.937
1.6	0.252	1.6	0.560	1.6	0.822	1.6	1.027
1.7	0.297	1.7	0.629	1.7	0.906	1.7	1.118
1.8	0.345	1.8	0.701	1.8	0.991	1.8	1.210
1.9	0.396	1.9	0.774	1.9	1.077	1.9	1.303
2.0	0.448	2.0	0.849	2.0	1.164	2.0	1.396
2.1	0.503	2.1	0.925	2.1	1.252	2.1	1.490
2.2	0.560	2.2	1.003	2.2	1.340	2.2	1.584
2.3	0.618	2.3	1.082	2.3	1.430	2.3	1.679
2.4	0.678	2.4	1.162	2.4	1.520	2.4	1.774
2.5	0.740	2.5	1.243	2.5	1.610	2.5	1.869
2.6	0.804	2.6	1.326	2.6	1.702	2.6	1.965
2.7	0.869	2.7	1.409	2.7	1.793	2.7	2.061
2.8	0.935	2.8	1.493	2.8	1.886	2.8	2.157
2.9	1.002	2.9	1.577	2.9	1.978	2.9	2.253
3.0	1.071	3.0	1.662	3.0	2.071	3.0	2.350
3.1	1.141	3.1	1.748	3.1	2.165	3.1	2.447
3.2	1.212	3.2	1.835	3.2	2.258	3.2	2.544
3.3	1.284	3.3	1.922	3.3	2.352	3.3	2.641
3.4	1.357	3.4	2.010	3.4	2.447	3.4	2.738
3.5	1.430	3.5	2.098	3.5	2.541	3.5	2.836

Table I-3. Typical “C” Values for Urban Areas (Rational Method)

Description of Area	Runoff Coefficient
Business	
Downtown areas	0.70-0.95
Neighborhood areas	0.50-0.70
Residential	
Single-family areas	0.30-0.50
Multi-units, detached	0.40-0.60
Multi-units, attached	0.60-0.75
Residential (suburban)	0.25-0.40
Apartment-dwelling areas	0.50-0.70
Industrial	
Light areas	0.50-0.80
Heavy areas	0.60-0.90
Parks, cemeteries	0.10-0.25
Playgrounds	0.20-0.35
Railroad yard areas	0.20-0.40
Unimproved areas	0.10-0.30
Streets/roads	
Asphalt	0.70-0.95
Concrete	0.80-0.95
Brick	0.70-0.85
Drives and walks	0.75-0.85
Roofs	0.75-0.95
Lawns – coarse-textured soil (greater than 85% sand)	
Flat slope (2%)	0.05-0.10
Average slope (2% - 7%)	0.10-0.15
Steep slope (greater than 7%)	0.15-0.20
Lawns – fine-textured soil (greater than 40% clay)	
Flat slope (2%)	0.13-0.17
Average slope (2% - 7%)	0.18-0.22
Steep slope (greater than 7%)	0.25-0.35

Table I-4. Typical “C” Values for Rural Areas (Rational Method)

Description of Area	Flat	Rolling 2% – 10%	Hilly Over 10%
Pavement	0.90	0.90	0.90
Earth shoulders	0.50	0.60	0.60
Grass shoulders	0.40	0.50	0.50
Side slopes – earth	0.50	0.60	0.60
Side slopes – turf	0.30	0.40	0.50
Medial strips – earth	0.25	0.30	0.30
Cultivated land	0.50	0.55	0.60
Meadows and pastures	0.25	0.30	0.35
Forested land	0.10	0.15	0.20

3. Determine the average runoff coefficient for soils within the disturbed area from Table I-3 or Table I-4.
4. Calculate the rainfall intensity (I),

$$I = \frac{14.97 (i)}{T_c^{(0.661)}}$$

Where: I = 2-year, 1-hour rainfall (inches)

T_c = Time of concentration (minutes [minimum 10 minutes])

5. Calculate the runoff flow rate (Q),

$$Q = CIA$$

Where: Q = Runoff flow rate (cfs)

C = Runoff coefficient

I = Rainfall intensity (inches per hour)

A = Area of the drainage basin (acres)

I.D.3.d. SWPPP Information Sheet

The SWPPP requires all drainage parameters shown in the SWPPP Information Sheet (Figure I-11 and Appendix B1). The following guidelines are provided to complete this form:

- Enter the 2-year, 24-hour and 1-hour rainfalls from the NOAA *Precipitation–Frequency Atlas of the Western United States* or locally accepted precipitation data.
- Calculate the rainfall intensity as described in Section I.D.3.c. For areas within construction limits, time of concentration (T_c) could be assumed ten minutes. For offsite runoff or large drainage areas, the time of concentration and appropriate rainfall intensity should be calculated.
- Enter the average NRCS hydrologic soil group for soils within the disturbed area.
- Enter the average NRCS CN for soils within the disturbed area during construction. Determine the direct runoff from the two-year, 24-hour event using Table I-2.
- Enter the runoff coefficient within the disturbed area during and after construction.
- Enter the average NRCS CN for offsite soils and onsite soils outside the disturbed area. Determine the direct runoff from the two-year, 24-hour event per above procedure.
- Calculate the volume of runoff by multiplying the drainage area (D.A.) in square feet with the direct runoff (q) and dividing by 12 to convert to cubic feet. Calculate the rate of runoff (Q) using the Rational Method as described in Section I.D.3.c.

SWPPP INFORMATION SHEET

SITE DESCRIPTION & NOI INPUTS

NATURE OF ACTIVITY		ROADWAY CONSTRUCTION
GENERAL LOCATION AND SITE MAP		REFER TO VICINITY MAP AND TEMPORARY EROSION AND SEDIMENT CONTROL PLAN (TESCP)
DISTURBED AND UNDISTURBED AREA		REFER TO TESCP
STRUCTURAL & NON-STRUCTURAL CONTROLS		REFER TO TESCP
LOCATIONS WHERE STABILIZATION WILL OCCUR		REFER TO REVEGETATION/EROSION CONTROL PLAN
TOTAL SITE AREA	89 AC	AREA WITHIN THE R/W
RECEIVING WATER		RIO GRANDE
TOTAL DISTURBED AREA	5 AC	AREA WITHIN THE SLOPE LIMITS
LATITUDE	35°05'	
LONGITUDE	103°32'00"	
ESTIMATE OF LIKELIHOOD OF DISCHARGE		2 TIMES PER MONTH
ENDANGERED SPECIES OR CRITICAL HABITAT (YES OR NO)	ENV. SECTION NO	
PART I B 3 e (2) OF THE PERMIT (a, b, c, or d)	ENV. SECTION a	

DRAINAGE PARAMETERS

DRAINAGE PATTERNS		REFER TO TESCP
APPROXIMATE SLOPES AFTER MAJOR GRADING		REFER TO P & P'S
RAINFALL 2-YEAR, 24-HOUR, inch (mm)	1.4 (36)	
2-YEAR, 1-HOUR, inch (mm)	0.96 (24)	
INTENSITY, in/hr (mm/hr) FOR $T_c = 10$ minutes	2.59 (66)	
HYDROLOGICAL SOIL GROUP	B	
CURVE NUMBER(CN), UNDISTURBED AREA	75	
CURVE NUMBER(CN), DISTURBED AREA	86	
RUNOFF COEFFICIENT, PRIOR TO CONSTRUCTION	0.75	
RUNOFF COEFFICIENT, DURING CONSTRUCTION	0.85	
RUNOFF COEFFICIENT, AFTER CONSTRUCTION	0.95	

RUNOFF DISCHARGE & VOLUME CALCULATION

THE FOLLOWING PROCEDURES SHOULD BE USED TO CALCULATE THE RUNOFF DISCHARGE AND VOLUME TO DESIGN THE EROSION CONTROL MEASURES:

DISCHARGE: $Q = CIA$ (English) $Q = 0.0028CIA$ (Metric)

WHERE,
 Q = DISCHARGE, cfs (m^3/s)
 C = RUNOFF COEFFICIENT
 I = RAINFALL INTENSITY, in/hr (mm/hr)
 A = AREA OF THE SITE, acres (hectares)

VOLUME: $V = QT_c$

WHERE,
 V = VOLUME, ft^3 (m^3)
 $T_c = (1/60) 0.0078 L^{0.77} S^{-0.385}$, minutes

ASSUME,
 $T_c = 10$ MIN. FOR BASINS WITHIN PROJECT LIMITS
 L = LENGTH OF WATERSHED, ft (m)
 S = SLOPE, ft/ft (m/m)

GENERAL NOTES:

1. THE 1997 EDITION OF NMSH&TD NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) HANDBOOK AND SECTION 603 - TEMPORARY EROSION & SEDIMENT CONTROL OF THE 1996 EDITION OF THE NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION - SHALL BE USED AS MINIMUM REQUIREMENTS TO DEVELOP OR MODIFY THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
2. THE NPDES PERMIT NUMBER FOR THE PROJECT OR A COPY OF THE NOTICE OF INTENT (NOI), IF A PERMIT NUMBER HAS NOT YET BEEN ASSIGNED, SHALL BE POSTED AT THE PROJECT SITE OR THE FIELD OFFICE AT ALL TIMES DURING CONSTRUCTION.
3. THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ALL MAINTENANCE AND INSPECTION REPORTS SHALL BE SIGNED BY A QUALIFIED INSPECTOR ASSIGNED BY CONTRACTOR. THE SWPPP AND THE INSPECTION REPORTS SHALL BE AVAILABLE TO EPA REPRESENTATIVE AT ALL TIMES DURING CONSTRUCTION.
4. ALL DRAINAGE INFORMATION NEEDED TO COMPLETE THE NOTICE OF INTENT (NOI) ARE PROVIDED IN THIS PLAN.

Figure I-11. Sample of a Completed SWPPP Information Sheet

I.D.4. Sediment Control Plans

The performance of structural erosion control measures is governed by the total volume of runoff, the rate of runoff from the area tributary to the measure, and the erosional characteristics of the site. The tributary area to an erosion and sediment control measure should include both disturbed and undisturbed areas subject to the adjustments addressed in the following sections.

The procedure for computing the amount of erosion is not an exact science. The processes that govern soil erosion are complicated. The complicated nature of the processes yields methodologies with many simplified assumptions in order to create a manageable solution to the problem. It is unlikely that any equation, statistical or otherwise, could accurately predict the response of all soil types to all the natural or man-made forces affecting the erosion process. Therefore, using an appropriate soil-loss protection model (e.g., SEDCAD 4.0, RUSLE, Sediment II, MILLISED, etc.), the operator must demonstrate that site-specific practices yield less sediment after construction than before. For demonstration purposes, the RUSLE methodology and its Internet-available spreadsheet will be used. Other models may be equally available and appropriate. See www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag28-2-soil-loss-computation.xls to download the spreadsheet. (Figure I-12 is a sample of the completed spreadsheet.) See also www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag28-1-c-factor-rusle.xls for assistance in using the correct C values. For a more rigorous development of RUSLE, see www.sedlab.olemiss.edu/rusle/download.html to download the RUSLE program, templates and databases for a more comprehensive development of the topic.

I.E. BEST MANAGEMENT PRACTICES FOR CONSTRUCTION

In selecting BMPs to be incorporated into an SWPPP, the user must understand the causes of pollution. Again, the three goals of the NPDES storm water program are to reduce erosion, minimize sedimentation, and control the discharge of non-storm water pollutants. Understanding how these processes occur will help the user choose the best BMPs for a site.

Two types of erosion can occur: surface erosion and stream erosion. Surface erosion is caused by the impact of raindrops on the soil, and the very shallow sheet flow at low velocities across the soil. Surface erosion is best controlled using stabilization practices, minimizing the area disturbed (including tree/brush/vegetative clearing and grubbing), and minimizing the time that disturbed areas are exposed. Minimizing surface erosion results in less sedimentation to be dealt with in storm water leaving the site. Stream erosion occurs when water collects and moves through rills, gullies, and channels that can develop and enlarge by the concentrated flow. Stream erosion is usually controlled using structural controls or leveling. The key to reducing stream erosion is to reduce the velocity of the flow.

USDA-Natural Resources Conservation Service		Attachment 1		NM-ECS-2 Revised 9/03 mas																																								
SOIL LOSS COMPUTATION																																												
Benchmark: <input type="text"/> Alternative Treatment: <input type="text"/> Rainfall Factor (RUSLE): <input type="text" value="25"/> Soil Name & Tex: <input type="text" value="Nijack"/> Soil Loss Tolerance (T): <input type="text" value="t/ac/yr"/> Wind Climate Factor: <input type="text"/> RUSLE C factor (field 1): <input type="text" value="0.17"/> (field 2): <input type="text"/> (field 3): <input type="text"/> (field 4): <input type="text"/> (field 5): <input type="text"/> (field 6): <input type="text"/>	(check one)	Client: <input type="text" value="NMDOT"/> Location: <input type="text" value="Los Alamos"/> County: <input type="text" value="Los Alamos"/> Date: <input type="text" value="11/20/2003"/> Field Office: <input type="text"/> Planner: <input type="text" value="Mayne"/> Crop Rotation: <input type="text"/>	Mgt. Condition: <input style="width: 100%;" type="text"/>																																									
Type of Land: <input type="text" value="Rangeland"/>																																												
WIND EROSION (Mgt. Period Method)																																												
Note: Attach WEQ run																																												
(Wind erosion field number and size must be filled out to use in other forms of erosion.)																																												
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Field (num)	Size (ac)	Rainfall R (factor)	Soil K (factor)	Slope (%)	Length (ft)	Length-Slope LS (factor)	Cover-Mgt C (factor)	Support Practices P (factor)	Soil Loss A (t/ac/yr)	Tons by Field (t/yr)																																		
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Figure I-12. Sample of Completed Calculations Spreadsheet

Sedimentation is the particles of sand, soil, and debris collected and suspended in the storm water as it travels across the surface or in stream flow. Again, the less erosion that occurs, the less sediment there will be in the water. Once suspended in water, sediments are most easily removed by settling or filtration methods. Slowing the velocity of the water in a sediment trap, tank, or pond allows the heavier particles to settle out of the water due to gravity. Passing the water through filtering devices such as silt fences or straw bales will also reduce the amount of sediment in the water. These are types of structural controls.

The discharge of non-storm water pollutants occurs when chemicals or non-natural materials come in contact with and are picked up and carried offsite by storm water. This can include a wide variety of materials such as trash, paint, fuels, lubricants, adhesives, and raw cement. Non-storm water pollution is controlled through good housekeeping practices. Storing these materials in protected storage areas or containers prevents contact with the storm water. Picking up and removing trash on a regular basis are important to good housekeeping. Cleaning up spills immediately lessens the chance of contact with storm water. Keeping equipment maintained reduces the likelihood of leaks. The goal is to prevent contact of these materials with storm water because, if there is no contact, the materials cannot be carried offsite by the storm water. Appendix A provides summaries of current BMPs to be considered for adoption into SWPPPs. The BMPs are organized into three classifications: Stabilization Practices (Appendix A1), Structural Controls (Appendix A2), and Housekeeping Practices (Appendix A3). BMPs should be used, combined, and/or modified using good engineering judgment to meet the three NPDES storm water program goals. They must also conform to all federal, state, local, and other authorities' requirements.